

## CLAIMS

What is claimed is:

1        Claim 1. A solid calcium hypochlorite formulation  
2        comprising:  
3        a calcium hypochlorite particle containing at least 50%  
4        active calcium hypochlorite and having an available chlorine  
5        content of at least about 30%;  
6        from about 0.01 to about 10% by weight of a polymeric  
7        alkali salt; and  
8        a water content of from about 2% to about 20% by  
9        weight;  
10       wherein said solid calcium hypochlorite exhibits anti-  
11       scaling characteristics and reduced hygroscopicity and  
12       reactivity.

1       Claim 2. The formulation in accordance with claim 1,  
2       wherein:  
3       said calcium hypochlorite particle is in the form of a  
4       granule, a pellet, a tablet or a briquette.

1       Claim 3. The formulation in accordance with claim 1,  
2       wherein:

1        said calcium hypochlorite particle is coated or  
2    encapsulated with at least one alkali salt of a compound  
3    selected from the group consisting of a polymaleate, a  
4    polyacrylate, a polycarboxylate, a polymethacrylate, a  
5    phosphinopolycarboxylate, a carboxylate-sulfonate copolymer,  
6    a maleic anhydride copolymer, a polyepoxysuccinate, maleate-  
7    sulfonate copolymer, maleate-phosphonate copolymer,  
8    carboxylate-phosphonate copolymer, or mixtures thereof.

1        Claim 4. The formulation in accordance with claim 3,  
2    wherein:

3        the alkali salt is at least one salt selected from the  
4    group consisting of the sodium, potassium, lithium, calcium  
5    or magnesium salts of said compounds.

1        Claim 5. The formulation in accordance with claim 3  
2    wherein said alkali salt is in the form of a liquid, a  
3    slurry, or a solid.

1        Claim 6. The formulation in accordance with claim 1,  
2    further including:

3        a deposit controlling effective amount of an agent  
4    selected from the group consisting of at least one alkali  
5    salt of a compound selected from the group consisting of

1 polymaleic acid, polyepoxysuccinic acid, maleic anhydride  
2 copolymer, phosphinopolycarboxylic acid, carboxylic-sulfonic  
3 acid copolymer, maleic-sulfonic acid copolymer, maleic-  
4 phosphonic acid copolymer, carboxylic-phosphonic acid  
5 copolymer, or mixtures thereof.

1 Claim 7. The formulation in accordance with claim 6,  
2 wherein:

3 the alkali salt is at least one salt selected from the  
4 group consisting of the sodium, potassium, lithium, calcium  
5 or magnesium salts of said compounds.

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2 Claim 8. The formulation in accordance with claim 6,  
3 wherein:

4 said deposit controlling effective amount is from about  
5 0.01% to about 10% of the final weight of the formulated  
6 calcium hypochlorite product.

1 Claim 9. The formulation in accordance with claim 1  
2 wherein:

3 said polymeric alkali salt is a polymaleic acid salt, a  
4 polyepoxysuccinic acid salt or mixtures thereof.

1 Claim 10. The formulation in accordance with claim 1

1 wherein:

2       said polymeric alkali salt is a maleic anhydride  
3 copolymer salt.

1       Claim 11. The formulation in accordance with claim 1  
2 wherein:

3       said polymeric alkali salt is a phosphinocarboxylate  
4 salt.

1       Claim 12. The formulation in accordance with claim 1  
2 wherein:

3       said polymeric alkali salt is a polyacrylate salt.

1       Claim 13. The formulation in accordance with claim 1  
2 wherein:

3       said polymeric alkali salt is a polyacrylamide salt.

1       Claim 14. The formulation in accordance with claim 1  
2 wherein:

3       said polymeric alkali salt is a carboxylic-sulfonic  
4 acid copolymer.

1        Claim 15. The formulation in accordance with claim 1  
2    wherein:  
3        said polymeric alkali salt is a maleic-sulfonic acid  
4    copolymer.

1        Claim 16. The formulation in accordance with claim 1  
2    wherein:  
3        said polymeric alkali salt is a maleic-phosphonic acid  
4    copolymer.

1        Claim 17. The formulation in accordance with claim 1  
2    wherein:  
3        said polymeric alkali salt is a carboxylic-phosphonic  
4    acid copolymer.

1        Claim 18. A method for applying a polymeric alkali salt  
2    to reduce the hygroscopic and reactivity characteristics of  
3    a solid calcium hypochlorite particle comprising:  
4        providing a solid calcium hypochlorite in a particle  
5    form;  
6        applying at least one polymeric alkali salt to said  
7    solid calcium hypochlorite in an amount sufficient to reduce  
8    reactivity of said calcium hypochlorite during at least one  
9    phase of a calcium hypochlorite manufacturing process.

1        Claim 19. The method in accordance with claim 18  
2 wherein:  
3        said polymeric alkali salt is applied in the form of a  
4 slurry.

1        Claim 20. The method in accordance with claim 18  
2 wherein:  
3        said polymeric alkali salt is applied in the form of a  
4 solid.

1        Claim 21. The method in accordance with claim 18  
2 wherein:  
3        said polymeric alkali salt is applied in the form of a  
4 foam.

1        Claim 22. The method in accordance with claim 18  
2 wherein:  
3        said polymeric alkali salt is applied in the form of a  
4 liquid.

1        Claim 23. The method in accordance with claim 18  
2 further including:  
3        addition of a deposit controlling effective amount of

1 an agent selected from the group consisting of at least one  
2 alkali salt of a compound selected from the group consisting  
3 of polymaleic acid, polyexpoxy succinic acid, maleic  
4 anhydride copolymer, phosphinopolycarboxylic acid,  
5 carboxylic-sulfonic acid copolymer, maleic-sulfonic acid  
6 copolymer, maleic-phosphonic acid copolymer, carboxylic-  
7 phosphonic acid copolymer, or mixtures thereof.

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